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## Appendix P

### Rare Animals of the Wolf River Basin

The Wisconsin Natural Heritage Inventory lists 178 rare animals in the Wolf River Basin. These include nine WI Endangered species, 20 WI Threatened species, and 149 Special Concern species. Only one animal, a land snail (*Catinella gelida*) is considered imperiled globally (G2), although another 15 Wolf River basin species are considered rare or local throughout their range (G3). The remaining rare species are considered secure (G4-G5) or global status is unknown. From the perspective of the state of Wisconsin, 18 species from the basin are critically imperiled (S1), 74 species are imperiled (S2), 71 species are rare or uncommon (S3). The remaining 15 species are either secure (S4), of unknown status (SU) or extirpated (SX), but are tracked at some level by NHI.

Aquatic habitats are considered critical for 51 percent of the rare species found in the basin. Other important habitats for rare species in the basin are wetlands, harboring 17 percent of the taxa, northern forests with 14 percent, pine/oak barrens with 9 percent, southern forests with 7 percent, grasslands with 6 percent and oak savanna with 2 percent.

As a result of inventory work conducted in the 1999-2000 field seasons and subsequent literature review, a number of invertebrates were added to the NHI Working List. Most of these were aquatic insects.

Inventory coverage in the basin has been uneven in terms of species or species groups covered, chronology and geography. For example, as with rare vascular plants, an enormous amount of survey work was conducted in the vicinity of the proposed Crandon mine, but comparable work has not been basin-wide. The Lower Wolf River and several major tributaries have been systematically sampled for mussels, fish and aquatic insects, but other portions of the basin and other aquatic habitats have not. The efforts of the NHI in the 1999 field season were concentrated in the lower Wolf River Basin and on state properties and were basin wide in 2000. The upshot is that care need to be taken in generalizing about distribution patterns of rare species in the basin (as well as the state).

With consideration of the above, some patterns of rare species occurrences do seem apparent. Several species like the bald eagle, osprey, northern goshawk, etc. are largely confined to the continuously forested northern part of the basin. Many species are strongly associated with the Wolf River corridor. Many of these are restricted to the northern or southern portions of the basin.

### Animal Summaries

This appendix lists each of the rare animal species known to occur within the Wolf River basin and provides information on conservation status and species management. For each of the animals, the state and federal protection status is listed in the table below and the element rank (denoting its rarity in Wisconsin and throughout its range) is listed with each species paragraph. The status and ranking codes are defined on the first pages of the Wisconsin Natural Heritage Working List (see Appendix Q).

**Table P-1: Rare Animal Species of the Wolf River Basin**

Scientific Name	Common name	Last obs Year	State Status	Federal Status
<i>Accipiter gentilis</i>	Northern goshawk	2000	SC/M	
<i>Acipenser fulvescens</i>	Lake sturgeon	2001	SC/H	
<i>Acris crepitans blanchardi</i>	Blanchard's cricket frog	1991	END	
<i>Aeshna tuberculifera</i>	Black-tipped damer	2000	SC/N	
<i>Aeshna verticalis</i>	Green-striped damer	1985	SC/N	
<i>Agabates acuductus</i>	A hydrophilid beetle	2000	SC/N	
<i>Agabus bicolor</i>	A predaceous diving beetle	1999	SC/N	
<i>Agabus inscriptus</i>	A predaceous diving beetle	1999	SC/N	
<i>Agabus wasastjernaee</i>	Predaceous diving beetle	2000	SC/N	
<i>Alasmodonta marginata</i>	Elktoe	1995	SC/H	
<i>Alasmodonta viridis</i>	Slippershell mussel	1991	THR	
<i>Ammodramus henslowii</i>	Henslow's sparrow	2000	THR	
<i>Aphredoderus sayanus</i>	Pirate perch	1970	SC/N	
<i>Ardea herodias</i>	Great blue heron	2001	SC/M	
<i>Baetisca obesa</i>	A mayfly	1999	SC/N	
<i>Boloria eunomia</i>	Bog fritillary	2000	SC/N	
<i>Botaurus lentiginosus</i>	American bittern	2001	SC/M	
<i>Brachycercus prudens</i>	A caenid mayfly	1999	SC/N	
<i>Buteo lineatus</i>	Red-shouldered hawk	2000	THR	
<i>Callophrys henrici</i>	Henry's elfin	1990	SC/N	
<i>Catinella gelida</i>	A land snail	1997	SC/N	
<i>Celina hubbelli</i>	A predaceous diving beetle	1999	SC/N	
<i>Chlidonias niger</i>	Black tern	2001	SC/M	
<i>Chlosyne gorgone</i>	Gorgone checker spot	2000	SC/N	
<i>Cicindela lepida</i>	Little white tiger beetle	2000	SC/N	
<i>Cicindela patruela huberi</i>	A tiger beetle	2000	SC/N	
<i>Cicindela patruela patruela</i>	A tiger beetle	2000	SC/N	
<i>Cionella morseana</i>	Appalachian pillar	1997	SC/N	
<i>Circus cyaneus</i>	Northern harrier	2001	SC/M	
<i>Clemmys insculpta</i>	Wood turtle	2000	THR	
<i>Coccyzus americanus</i>	Yellow-billed cuckoo	1984	SC/M	
<i>Copelatus glyphicus</i>	Predaceous diving beetle	2000	SC/N	
<i>Coturnicops noveboracensis</i>	Yellow rail	1994	THR	
<i>Cymbiodyta acuminata</i>	A water scavenger beetle	1999	SC/N	
<i>Cymbiodyta minima</i>	A water scavenging beetle	1999	SC/N	
<i>Dendroica cerulea</i>	Cerulean warbler	2000	THR	
<i>Diadophis punctatus edwardsii</i>	Northern ringneck snake	1998	SC/H	
<i>Dubiraphia bivittata</i>	A dubiraphia riffle beetle	2000	SC/N	
<i>Empidonax virens</i>	Acadian flycatcher	2000	THR	
<i>Emydoidea blandingii</i>	Blanding's turtle	2001	THR	
<i>Enallagma anna</i>	River bluet	1986	SC/N	
<i>Enallagma traviatum</i>	Slender bluet	2000	SC/N	
<i>Enochrus consortus</i>	A water scavenging beetle	2000	SC/N	
<i>Enochrus perplexus</i>	A water scavenger beetle	2000	SC/N	
<i>Enochrus sayi</i>	A water scavenging beetle	1999	SC/N	
<i>Epioblasma triquetra</i>	Snuffbox	2001	END	
<i>Erimyzon oblongus</i>	Creek chubsucker	UNK	SC/N	
<i>Erimyzon sucetta</i>	Lake chubsucker	1981	SC/N	
<i>Erynnis lucilius</i>	Columbine dusky wing	1991	SC/N	
<i>Erynnis persius</i>	Persius dusky wing	1994	SC/N	
<i>Etheostoma clarum</i>	Western sand darter	2001	SC/N	
<i>Etheostoma microperca</i>	Least darter	1979	SC/N	
<i>Euphyes bimaculata</i>	Two-spotted skipper	1994	SC/N	
<i>Euphyes dion</i>	Dion skipper	2000	SC/N	
<i>Falcipecten canadensis</i>	Spruce grouse	1989	THR	
<i>Fundulus diaphanus</i>	Banded killifish	1995	SC/N	
<i>Gallinula chloropus</i>	Common moorhen	2001	SC/M	

Scientific Name	Common name	Last obs Year	State Status	Federal Status
<i>Glyphyalinia rhoadsi</i>	Sculpted glyph	1997	SC/N	
<i>Gomphurus externus</i>	Plains clubtail	1999	SC/N	
<i>Gomphurus lineatifrons</i>	Splendid clubtail	2000	SC/N	
<i>Gomphurus ventricosus</i>	Skillet clubtail	1999	SC/N	
<i>Gomphus viridifrons</i>	Green-faced clubtail	1999	SC/N	
<i>Graphoderus manitobensis</i>	A predaceous diving beetle	1999	SC/N	
<i>Gyrinus impressicollis</i>	A whirlygig beetle	2000	SC/N	
<i>Haliaeetus leucocephalus</i>	Bald eagle	1992	SC/FL	LT,PD
<i>Haliphus canadensis</i>	A crawling water beetle	1999	SC/N	
<i>Haliphus leopardus</i>	A crawling water beetle	2000	SC/N	
<i>Haliphus pantherinus</i>	A crawling water beetle	2000	SC/N	
<i>Hebrus buenoi</i>	A velvet waterbug	2000	SC/N	
<i>Hebrus burmeisteri</i>	A velvet waterbug	1999	SC/N	
<i>Helocombus bifidus</i>	A water scavenging beetle	1999	SC/N	
<i>Hemidactylium scutatum</i>	Four-toed salamander	2000	SC/H	
<i>Hemileuca sp 3</i>	Midwestern fen buckmoth	1974	SC/N	
<i>Hesperia comma</i>	Laurentian skipper	2000	SC/N	
<i>Hesperia leonardus leonardus</i>	Leonard's skipper	2000	SC/N	
<i>Hesperocorixa semilucida</i>	A water boatman	2000	SC/N	
<i>Hetaerina titia</i>	Dark rubyspot	1999	SC/N	
<i>Hydrobius melaenum</i>	A water scavenging beetle	2000	SC/N	
<i>Hydrochara leechi</i>	A water scavenger beetle	1999	SC/N	
<i>Hydrochara spangleri</i>	A water scavenger beetle	2000	SC/N	
<i>Hydrometra martini</i>	A water measurer	2000	SC/N	
<i>Hydroporus badiellus</i>	A predaceous diving beetle	1999	SC/N	
<i>Hydroporus vittatus</i>	A predaceous diving beetle	2000	SC/N	
<i>Hydropsyche bidens</i>	A caddisfly	1999	SC/N	
<i>Ilybius discedens</i>	A predaceous diving beetle	1999	SC/N	
<i>Ilybius ignarus</i>	Diving beetle	2000	SC/N	
<i>Ilybius incarinatus</i>	A predaceous diving beetle	2000	SC/N	
<i>Isoperla bilineata</i>	A perlid stonefly	1999	SC/N	
<i>Isoperla lata</i>	A perlid stonefly	1996	SC/N	
<i>Isoperla marlynia</i>	A perlid stonefly	1999	SC/N	
<i>Isoperla richardsoni</i>	A perlid stonefly	1999	SC/N	
<i>Ixobrychus exilis</i>	Least bittern	2000	SC/M	
<i>Laccobius agilis</i>	A water scavenging beetle	2000	SC/N	
<i>Laccobius reflexipennis</i>	A predaceous beetle	2000	SC/N	
<i>Lepomis megalotis</i>	Longear sunfish	1979	THR	
<i>Lestes inaequalis</i>	Elegant spreadwing	2000	SC/N	
<i>Lestes vigilax</i>	Swamp spreadwing	2000	SC/N	
<i>Liodessus cantralli</i>	Cantrall's bog beetle	1999	SC/N	
<i>Liodessus flavicollis</i>	A predaceous diving beetle	2000	SC/N	
<i>Lioporeus triangularis</i>	A predaceous diving beetle	1999	SC/N	
<i>Luxilus chrysocephalus</i>	Striped shiner	UNK	END	
<i>Lycaeides idas nabokovi</i>	Northern blue butterfly	1994	END	
<i>Lycaeides melissa samuelis</i>	Karner blue butterfly	2001	SC/FL	LE
<i>Lycaena dorcas</i>	Dorcas copper	2000	SC/N	
<i>Lycaena epixanthe</i>	Bog copper	2001	SC/N	
<i>Lythrurus umbratilis</i>	Redfin shiner	1979	THR	
<i>Macrochilo bivittata</i>	An owlet moth	1994	SC/N	
<i>Macrhybopsis aestivalis</i>	Shoal chub	2000	THR	
<i>Matus bicarinatus</i>	A predaceous diving beetle	2000	SC/N	
<i>Melanerpes erythrocephalus</i>	Red-headed woodpecker	1984	SC/M	
<i>Meropleon ambifuscum</i>	Newman's brocade	1994	SC/N	
<i>Microtus ochrogaster</i>	Prairie vole	1898	SC/N	
<i>Moxostoma carinatum</i>	River redhorse	2000	THR	
<i>Moxostoma valenciennesi</i>	Greater redhorse	2000	THR	
<i>Nannothemis bella</i>	Elfin skimmer	1990	SC/N	
<i>Napaeozapus insignis</i>	Woodland jumping mouse	1995	SC/N	
<i>Neoscutopterus hornii</i>	A predaceous diving beetle	1999	SC/N	

Scientific Name	Common name	Last obs Year	State Status	Federal Status
<i>Nepa apiculata</i>	A water scorpion	2000	SC/N	
<i>Neurocordulia yamaskanensis</i>	Stygian shadowfly	1999	SC/N	
<i>Notropis anogenus</i>	Pugnose shiner	1979	THR	
<i>Notropis texanus</i>	Weed shiner	2001	SC/N	
<i>Nyctanassa violacea</i>	Yellow-crowned night-heron	1984	THR	
<i>Nycticorax nycticorax</i>	Black-crowned night-heron	2001	SC/M	
<i>Oeneis jutta</i>	Jutta arctic	2000	SC/N	
<i>Ophiogomphus carolus</i>	Riffle snaketail	2000	SC/N	
<i>Ophiogomphus howei</i>	Pygmy snaketail	1999	THR	
<i>Ophisaurus attenuatus</i>	Western slender glass lizard	1989	END	
<i>Opsopoeodus emiliae</i>	Pugnose minnow	2000	SC/N	
<i>Palaemonetes kadiakensis</i>	Mississippi grass shrimp	2001	SC/N	
<i>Pandion haliaetus</i>	Osprey	2001	THR	
<i>Paracloeodes minutus</i>	A small minnow mayfly	1992	SC/N	
<i>Parameletus chelifera</i>	A primitive minnow mayfly	1993	SC/N	
<i>Pelocoris femorata</i>	A creeping water bug	1999	SC/N	
<i>Pentagenia vittigera</i>	An ephemerid mayfly	1992	SC/N	
<i>Perisoreus canadensis</i>	Gray jay	1994	SC/M	
<i>Phyciodes batesii</i>	Tawny crescent spot	2000	SC/N	
<i>Picoides arcticus</i>	Black-backed woodpecker	1994	SC/M	
<i>Pieris virginensis</i>	West virginia white	1995	SC/N	
<i>Plauditus cestus</i>	A small minnow mayfly	2000	SC/N	
<i>Plebejus saepiolus</i>	Greenish blue	1994	SC/N	
<i>Pleurobema sintoxia</i>	Round pigtoe	1997	SC/H	
<i>Poanes massasoit</i>	Mulberry wing	2000	SC/N	
<i>Poanes viator</i>	Broad-winged skipper	2000	SC/N	
<i>Pompeius verna</i>	Little glassy wing	1991	SC/N	
<i>Procambarus acutus</i>	White river crawfish	2000	SC/N	
<i>Protonotaria citrea</i>	Prothonotary warbler	2000	SC/M	
<i>Pseudiron centralis</i>	A heptageniid mayfly	1999	SC/N	
<i>Rallus elegans</i>	King rail	2000	SC/M	
<i>Rana catesbeiana</i>	Bullfrog	1986	SC/H	
<i>Ranatra nigra</i>	A water scorpion	2000	SC/N	
<i>Reithrodontomys megalotis</i>	Western harvest mouse	1976	SC/N	
<i>Rhantus sinuatus</i>	A predaceous diving beetle	2000	SC/N	
<i>Satyrodes eurydice fumosa</i>	Smokey eyed brown	1994	SC/N	
<i>Schinia bina</i>	Bina flower moth	1996	SC/N	
<i>Schinia indiana</i>	Phlox moth	1992	END	
<i>Simpsonaias ambigua</i>	Salamander mussel	1992	THR	
<i>Somatochlora forcipata</i>	Forcinate emerald	2000	SC/N	
<i>Somatochlora incurvata</i>	Warpaint emerald	2000	END	
<i>Sorex arcticus</i>	Arctic shrew	2000	SC/N	
<i>Sorex hoyi</i>	Pigmy shrew	1995	SC/N	
<i>Sorex palustris</i>	Water shrew	1995	SC/N	
<i>Sperchopsis tessellatus</i>	A water scavenging beetle	2000	SC/N	
<i>Spermophilus franklinii</i>	Franklin's ground squirrel	1990	SC/N	
<i>Spharagemon marmorata</i>	Northern marbled locust	1999	SC/N	
<i>Stenelmis antennalis</i>	A riffle beetle	1999	SC/N	
<i>Stenelmis bicarinata</i>	A riffle beetle	1999	SC/N	
<i>Stenelmis fuscata</i>	A riffle beetle	1999	SC/N	
<i>Sterna forsteri</i>	Forster's tern	2000	END	
<i>Strix nebulosa</i>	Great gray owl	1995	SC/M	
<i>Stylogomphus albistylus</i>	Least clubtail	1994	SC/N	
<i>Stylurus notatus</i>	Elusive clubtail	2000	SC/N	
<i>Stylurus scudderi</i>	Zebra clubtail	1999	SC/N	
<i>Trachyrhachys kiowa</i>	Ash-brown grasshopper	1999	SC/N	
<i>Triaenodes nox</i>	A caddisfly	2000	SC/N	
<i>Trimerotropis maritima</i>	Seaside grasshopper	1999	SC/N	
<i>Tritogonia verrucosa</i>	Buckhorn	1995	THR	
<i>Tyto alba</i>	Barn owl	1981	END	

Scientific Name	Common name	Last obs Year	State Status	Federal Status
<i>Wormaldia moesta</i>	A caddisfly	1980	SC/N	

## Aquatic Invertebrates

### **black-tipped darner (*Aeshna tuberculifera*) - Special Concern, S3**

Brief Description: A large deep blue dragonfly with abdominal segment 10 black.

Distribution: Canada, north-central and northeastern U.S.

Habitat: Larvae are in shallow densely vegetated ponds, including acid bog ponds, peaty acidic lakes, possibly streams. Adults range widely in adjacent areas.

State Records: Adults have been collected rarely but widely in northern and central to south central WI. Factors limiting distribution in WI are not known.

Wolf River Basin Records: 2 records from 2000 and 1985.

Conservation Concerns: Fish stocking, shoreline modifications water quality degradation, water level alterations.

### **green-striped darner (*Aeshna verticalis*) - Special Concern, S3**

Brief Description: A large clear winged dragonfly with bright blue and gray markings.

Distribution: Northeastern to midwestern U.S. and southern Canada.

Habitat: Larvae in wetlands with shallow or very limited water and occasionally in cattail marshes. Adults range widely in surrounding areas.

State Records: Widely scattered from northwest to southeast part of the state with no records in the southwest.

Wolf River Basin Records: 1 record from 1985.

Conservation Concerns: Wetland alterations.

### **a predaceous diving beetle (*Agabates acuductus*) - Special Concern, S2S3**

Brief Description: A medium-sized (7 mm) reddish brown aquatic beetle with numerous short, deep scratches on its back.

Distribution: Ranges from southern Quebec and southern Ontario south to Florida and west to Wisconsin.

Habitat: Shaded, deciduous woodland pools, found amongst dense leaf litter, and river sloughs.

State Records: Newly added to working list, known from 12 counties throughout the state.

Wolf River Basin Records: 3 county records in study area. One new in 2000.

Conservation Concerns: Unknown.

### **a predaceous diving beetle (*Agabus bicolor*) - Special Concern, S3**

Brief Description: A medium-sized (8 mm), black, streamlined aquatic beetle.

Distribution: Across Canada, WI, Upper Peninsula of MI, and Northeastern U.S. Fairly common in northern third of WI, but rare elsewhere in the state.

Habitat: Most found with Sphagnum in black spruce – tamarack swamps. Few in sedge – cattail marshes and shallow ponds.

State Records: Burnett to Marinette Counties; only 3 collection records for the remainder of the state scattered from Shawano, Chippewa, and Washington counties.

Wolf River Basin Records: 1 record from 1999.

Conservation Concerns: Wetland alterations.

**a predaceous diving beetle (*Agabus inscriptus*) - Special Concern, S2S3**

Brief Description: A medium-sized (6.5 mm), black, streamlined aquatic beetle.

Distribution: Across Canada, Great Lakes states, also MT and CO. Rare to uncommon statewide.

Habitat: Most found with in stillwater habitats usually containing Sphagnum.

State Records: Fifteen sites statewide.

Wolf River Basin Records: 1 record from 1999.

Conservation Concerns: Wetland alterations.

**a predaceous diving beetle (*Agabus wasastjernae*) - Special Concern, S2?**

Brief Description: A medium-sized (6.5 mm), black, streamlined aquatic beetle.

Distribution: Across Canada, WI, Upper Peninsula of MI, and Maine. Found only in northern WI.

Habitat: Small sphagnum ringed pools, usually in, or adjacent to, forest.

State Records: Newly added to the working list, 6 county records documented in the state.

Wolf River Basin Records: Only one record occurs in the study area.

Conservation Concerns: Unknown.

**elktoe (*Alasmodonta marginata*) - Special Concern, S4**

Brief Description: A freshwater mussel with fragile, inflated, and quadrate shaped shell. Shell color is yellowish-brown with numerous broad green rays speckled with dark green dots. Length to 4 inches (10.2cm).

Distribution: In the U.S. it is distributed in the Ohio-Mississippi River and Susquehanna River systems. In Canada it is in the Great Lakes – St. Lawrence system from Lake Huron to the Ottawa River.

Habitat: Medium-sized streams in gravel or mixed sand and gravel.

State Records: Known from 25 waterbodies in Wisconsin. Only common in St. Croix County.

Wolf River Basin Records: 7 records all from 1988.

Conservation Concerns: Increased sedimentation, impoundment.

**slippershell mussel (*Alasmodonta viridis*) - Threatened, S2**

Brief Description: A freshwater mussel with a light yellow, green, or brown, sometimes with green rays shell. Length 1.8 inches (4.6 cm) or less.

Distribution: Upper Mississippi River drainage; Ohio, Cumberland, and Tennessee Rivers; lower and middle sections of the St. Lawrence River system.

Habitat: Usually found buried in sand or fine gravel in shallow water or small streams. Also occurs along lake shores on a sand bottom.

State Records: Extant populations known from the Embarrass, Little Suamico, Meeme, Mukwonago, Mullet, Pensaukee, Pigeon, and Wolf Rivers plus Kelly Brook. Species may be found again in waters where currently only historical records

Wolf River Basin Records: 3 records from the late 1980s to the early 1990s.

Conservation Concerns: Because it inhabits small streams and headwaters, this mussel is particularly vulnerable to siltation and pollution from runoff. Habitat protection and water quality improvements would benefit this species. Increased development along waterways in southeastern and northeastern WI is of great concern to the continued existence of this species.

**a mayfly (*Baetisca obesa*) - Special Concern, S2**

Brief Description: An aquatic insect whose larvae are stout (10 mm), with a large carapace-like shield, and 3 tails. Adults are inconspicuous, have large wings, and live for only a day or so.

Distribution: Rare; previously known only from lower Wisconsin River and the St. Croix River.

Habitat: Medium to large sand bottomed rivers.

State Records: Only 18 collections from a handful of populations, there are 3 recent records from eastern WI.

Wolf River Basin Records: 7 records ranging between 1999 and 1979.

Conservation Concerns: Water level modifications; dredging, bank alterations.

**a Caenid mayfly (*Brachycercus prudens*) - Special Concern, S?**

Brief Description: A small (5 mm) mayfly with square gills and cone-like tubercles on the head. Adults are small, inconspicuous, and usually live only a few hours.

Distribution: Known from AL, KS, IN, IL, WI, and Saskatchewan.

Habitat: Large rivers.

State Records: There are 12 county records in the state, most in the southwestern quarter, but also Price, Marinette, and Waupaca.

Wolf River Basin Records: Waupaca Co. records occur in the study area and are from 1999.

Conservation Concerns: Uncertain.

**a predaceous diving beetle (*Celina hubbelli*) - Special Concern, S2S3**

Brief Description: A small (4 mm) yellowish to brown aquatic beetle with a tapered posterior end.

Distribution: Eastern North America. Uncommon south of a line from St. Croix to Sheboygan counties; absent elsewhere.

Habitat: Shallow cattail habitats where they pierce cattails to obtain oxygen.

State Records: Thirteen sites in southern two-thirds of state.

Wolf River Basin Records: 2 records from 1999.

Conservation Concerns: Wetland alterations.

**a predaceous diving beetle (*Copelatus glyphicus*) - Special Concern, S3?**

Brief Description: A small (5 mm) yellowish brown aquatic beetle with 10 narrow, longitudinal grooves on its back.

Distribution: Occurs throughout the eastern North America, and in California and Oregon. Uncommon statewide.

Habitat: Found in a variety of lentic habitats, including both temporary and permanent ponds. The most common habitat being shallow water over a dense mat of decaying leaves.

State Records: New to the working list, known from 14 counties, mainly in western WI.

Wolf River Basin Records: One record occurs in the study area.

Conservation Concerns: Unknown.

**a water scavenger beetle (*Cymbiodyta acuminata*) - Special Concern, S3**

Brief Description: A small ( 4.5 mm) brown to black aquatic beetle.

Distribution: Across Canada and northern U.S. Fairly common in northern two thirds of state. It is uncommon in the southern third of the state.

Habitat: Shallow ponds, marshes, and swamps.

State Records: At least 23 county records known.

Wolf River Basin Records: 2 records from 1999.

Conservation Concerns: Water level modifications.

**a water scavenging beetle (*Cymbiodyta minima*) - Special Concern, S3**

Brief Description: A small (3.5 mm) brown aquatic beetle.

Distribution: Across southern Canada, northern and eastern U.S. Uncommon statewide.

Habitat: Shallow ponds, marshes, and swamps, and margins of streams.

State Records: At least 32 populations are thought to exist in the state. Recent records from eastern WI.

Wolf River Basin Records: 1 record from 1999.

Conservation Concerns: Water level modifications.

**a Dubiraphia riffle beetle (*Dubiraphia bivittata*) - Special Concern, S3**

Brief Description: A small (3 mm), dark aquatic beetle with broad, longitudinal yellow stripes.

Distribution: Southern Canada, WI, IL, IN, OH, NY. Uncommon south of a line from LaCrosse to Outagamie counties; rare in Burnett and Vilas counties; apparently absent elsewhere.

Habitat: Plants and submerged wood in medium to large rivers and adjacent sloughs, marshes, and ponds.

State Records: At least 21 populations are thought to exist in the state. Several recent records from eastern WI.

Wolf River Basin Records: 3 records from 1999-2000.

Conservation Concerns: Shoreline modifications, flow modifications.

**river bluet (*Enallagma anna*) - Special Concern, S2**

Brief Description: A moderate sized robust damselfly with predominantly black and blue coloration. Larvae are very difficult to identify.

Distribution: Western U.S. plus Wisconsin and Illinois.

Habitat: Larvae confined to slow streams and rivers and sometimes are associated with springs or spring fed streams in Wisconsin.

State Records: Known from 2 streams in 2 SE Wisconsin counties and from one stream in Waupaca County.

Wolf River Basin Records: 1 older record from 1986.

Conservation Concerns: Uncertain.

**slender bluet (*Enallagma traviatum*) - Special Concern, S1S2**

Brief Description: A black and blue slender damselfly.



Distribution: South-central and eastern U.S. and eastern Canada.

Habitat: Usually found in permanent lakes and ponds with abundant emergent vegetation.

State Records: 2 records from eastern WI.

Wolf River Basin Records: 1 recent record from 2000.

Conservation Concerns: Uncertain.

**a water scavenging beetle (*Enochrus consortus*) - Special Concern, S3**

Brief Description: A medium-sized (7.5 mm) brown aquatic beetle with yellowish margins around the pronotum.

Distribution: Eastern North America. Uncommon in the southern third of the state; rare elsewhere.

Habitat: Ponds, marshes, margins of lakes and streams.

State Records: At least 24 populations are thought to exist in the state. Recent records from eastern WI.

Wolf River Basin Records: 5 recent records from 1999-2000.

Conservation Concerns: Water level modifications.

**a water scavenging beetle (*Enochrus perplexus*) - Special Concern, S2?**

Brief Description: A small (5 mm) black aquatic beetle.

Distribution: Scattered localities throughout North America. Rare statewide.

Habitat: Most found in ponds.

State Records: New to the working list, at least 15 population exist throughout the state.

Wolf River Basin Records: One record is in the study area. Recorded in 2000.

Conservation Concerns: Uncertain.

**a water scavenging beetle (*Enochrus sayi*) - Special Concern, S3**

Brief Description: A small (4.5 mm) brown aquatic beetle.

Distribution: Eastern North America. Uncommon in the southern half (Pierce to Shawano counties); absent in the northern half.

Habitat: Ponds; most have been collected at blacklight traps.

State Records: At least 15 populations are thought to exist in the state. Recent records from eastern WI.

Wolf River Basin Records: 1 record from 1999.

Conservation Concerns: Water level modifications.

**snuffbox (*Epioblasma triquetra*) - Endangered, S1**

Brief Description: A triangular-shaped freshwater mussel; relatively thick for its size, yellow or yellowish green with green rays, blotches, or chevron markings. Length 2.5 inches (6.4 cm).

Distribution: Mississippi River drainage; western New York west to Nebraska and Kansas, north to Minnesota, south to northern Alabama.

Habitat: Medium to large, clear rivers in gravel riffles.

State Records: Known from the Embarrass, St. Croix, Wolf, and Little Wolf Rivers.

Wolf River Basin Records: 4 records from 1995.

Conservation Concerns: Habitat destruction and river pollution have resulted in declines. Restriction of dredging, impoundments, sand and gravel mining, and navigational improvements would benefit this

species. The development of fish runways to facilitate the movement of host species through or around dams could also help to protect this species.

**plains clubtail (*Gomphurus externus*) - Special Concern, S2**

Brief Description: A large black and yellow dragonfly with the tip of the abdomen broadly flared (clubtail).

Distribution: Known previously only from the southern and western parts of the state.

Habitat: Large silty rivers.

State Records: At least 10 populations are known in the state. One recent record from eastern WI.

Wolf River Basin Records: 1 record from 1999.

Conservation Concerns: Unknown. This is a southern species that is more tolerant of silt than most members of the genus.

**splendid clubtail (*Gomphurus lineatifrons*) - Special Concern, S3**

Brief Description: A large blackish and yellow dragonfly, males with a prominent club that is narrower than the thorax. No yellow spot on top of club.

Distribution: Centered in the Midwest, extending to some of the northern Southern states, western northeastern states, and Mid-Atlantic States.

Habitat: Larvae in medium to large fast-flowing streams with good water quality. Adults usually found within a mile of larval sites.

State Records: 22 records, mostly in the northern counties, except for the 2 records in the central sands region.

Wolf River Basin Records: 4 records from 1999.

Conservation Concerns: Increased sedimentation, impoundments.

**skillet clubtail (*Gomphurus ventricosus*) - Special Concern, S3**

Brief Description: A large black and yellow dragonfly, males with the tip of the abdomen broadly flared (clubtail).

Distribution: Distributed widely across the northern half of the state. Generally upstream of the fall-line.

Habitat: Larvae in moderate sized fast clean rivers. Adults usually within a mile of breeding sites.

State Records: 34 records are known in the northern half of the state.

Wolf River Basin Records: 3 records from the late 1990s.

Conservation Concerns: Flow modifications; shoreline alterations. Moderately sensitive to siltation.

**green-faced clubtail (*Gomphus viridifrons*) - Special Concern, S3**

Brief Description: A medium sized black and yellow dragonfly, males with the tip of the abdomen moderately flared for a clubtail.

Distribution: Distributed widely across the northern half of the state. Generally upstream of the fall-line.

Habitat: Larvae in moderate sized fast clean rivers. Adults usually within a mile of larval sites.

State Records: 40 records are known in the northern half of the state.

Wolf River Basin Records: 6 records, the most recent in 1999 and the least in 1925.

Conservation Concerns: Flow modifications; shoreline alterations. This species is moderately sensitive to siltation.

**a predaceous diving beetle (*Graphoderus manitobensis*) - Special Concern, S2S3**

Brief Description: A large (14 mm) dark aquatic beetle with bold dark and light transverse band around head.

Distribution: Known from Manitoba, WI, and IA. Uncommon in south of a line from Pepin to Manitowoc counties; absent elsewhere.

Habitat: Large sedge and cattail marshes.

State Records: About 10 populations known from the southern part of the state.

Wolf River Basin Records: 1 record from 1999.

Conservation Concerns: Wetland alterations

**a whirligig beetle (*Gyrinus impressicollis*) - Special Concern, S2?**

Brief Description: A whirligig beetle, that is black, streamlined, and oval in shape (7.5 mm in length).

Distribution: Quebec, Ontario, Manitoba, WI, MI. Found only in northwestern WI.

Habitat: Often found on the surface of ponds, marshes, and lakes, and rarely in streams.

State Records: New to the working list, only 6 populations documented in the state.

Wolf River Basin Records: 2 records occur in the study area and both are from 2000.

Conservation Concerns: Uncertain.

**a crawling water beetle (*Haliplus canadensis*) - Special Concern, S2**

Brief Description: A small (4 mm) aquatic beetle that is yellowish with black splotches.

Distribution: Across Canada and the northern U.S. Uncommon in the eastern third of the state; absent elsewhere.

Habitat: Ponds and lakes.

State Records: At least 10 populations are thought to exist in the state. Recent records from eastern WI.

Wolf River Basin Records: 1 record from 1999.

Conservation Concerns: Water level modifications.

**water beetle (*Haliplus leopardus*) - Special Concern, S1S3**

Brief Description: A small (4 mm) aquatic beetle that is yellowish with black splotches.

Distribution: Quebec, and North- and Southeastern United States.

Habitat: Ponds and sloughs.

State Records: Newly added to the working list, 7 published county records (10 individuals), with 4 additional northern county records known.

Wolf River Basin Records: 1 record from 2000.

Conservation Concerns: Uncertain.

**a crawling water beetle (*Haliplus pantherinus*) - Special Concern, S2S3**

Brief Description: A small (4 mm) aquatic beetle that is yellowish with black splotches.

Distribution: Throughout eastern U.S. Uncommon throughout the state.

Habitat: Ponds, lakes and stream margins.

State Records: 14 county records and 9 more recently documented throughout the state.

Wolf River Basin Records: 11 records from 1999-2000.

Conservation Concerns: Shoreline modifications, flow modifications.

**a velvet waterbug (*Hebrus buenoi*) - Special Concern, S1?**

Brief Description: A tiny (2 mm) dark aquatic insect that lives on the surface of the water.

Distribution: Found in eastern two-thirds of U.S. Rare in WI.

Habitat: Found in emergent zone and sediments at waters edge.

State Records: New to the working list, only 1 population mapped in the state.

Wolf River Basin Records: Only state record occurs in the study area, was last observed in 2000.

Conservation Concerns: Uncertain.

**a velvet waterbug (*Hebrus burmeisteri*) - Special Concern, S2S3**

Brief Description: A tiny (2 mm) dark aquatic insect that lives on the surface of the water.

Distribution: Eastern two thirds of U.S. and Mexico. Rare statewide; apparently absent in the northwest part of the state. Distribution could be misleading because this species is probably under-represented in samples do to its small size.

Habitat: Shallow lentic habitats.

State Records: At least 14 populations estimated to occur in the state. One recent record from eastern WI.

Wolf River Basin Records: 1 record from 1999.

Conservation Concerns: Water level modifications, shore alterations.

**a water scavenging beetle (*Helocombus bifidus*) - Special Concern, S3**

Brief Description: A medium-sized (7 mm) black aquatic beetle with narrow yellowish margins.

Distribution: Uncommon statewide.

Habitat: Shallow lentic habitats; most were single specimen collections.

State Records: At least 33 populations are thought to exist in the state. Recent records from eastern WI.

Wolf River Basin Records: 2 records from 1999.

Conservation Concerns: Water level modifications.

**a water boatman (*Hesperocorixa semilucida*) - Special Concern, S3**

Brief Description: A medium-sized (7.5 mm) aquatic insect with yellow and black longitudinal stripes along the body and transverse stripes around the head.

Distribution: Known from WI, IL, and MI. Uncommon south of a line from Trempealeau to Shawano counties. Absent elsewhere.

Habitat: Ponds in the spring, larger rivers to overwinter.

State Records: At least 11 populations are estimated to occur in the state. Three recent records from eastern WI.

Wolf River Basin Records: 2 records from 1999-2000.

Conservation Concerns: Water level modifications, dredging, bank alterations.

**dark rubyspot (*Hetaerina titia*) - Special Concern, S1S2**

Brief Description: A smokey dark colored large damselfly.

Distribution: Previously known only from the southern edge of the state.

Habitat: Warmwater streams. Larvae climb on vegetation.

State Records: Only known from two waterbodies previously. Recent records from eastern WI extend the range north and east considerably.

Wolf River Basin Records: 2 records from 1999.

Conservation Concerns: Unknown, but possible sensitive to shoreline modifications.

**a water scavenging beetle (*Hydrobius melaenum*) - Special Concern, SU**

Brief Description: A medium-sized (9 mm) dark aquatic beetle.

Distribution: Widespread in WI.

Habitat: Under banks of small, spring-fed streams.

State Records: At least 18 records thought to exist.

Wolf River Basin Records: 2 records from 2000.

Conservation Concerns: Uncertain.

**a water scavenger beetle (*Hydrochara leechi*) - Special Concern, SU**

Brief Description: A large (17 mm), dark aquatic beetle.

Distribution: Occurs from PA to ND and south to NM.

Habitat: Basically unknown. Single specimen found in heavily vegetated swamp.

State Records: 2 records from eastern WI; only current record is from Wolf Basin.

Wolf River Basin Records: 1 record from 1999.

Conservation Concerns: Uncertain.

**a water scavenging beetle (*Hydrochara spangleri*) - Special Concern, S3?**

Brief Description: A large (18 mm), dark aquatic beetle.

Distribution: Ranges from WI to OH and south to FL and TX.

Habitat: Shallow floodplains of rivers.

State Records: 11 populations are found in the southern half of the state, most west in west-central and southwest.

Wolf River Basin Records: 2 records from 2000.

Conservation Concerns: Uncertain.

**a water measurer (*Hydrometra martini*) - Special Concern, S3**

Brief Description: A small (10 mm), very narrow and inconspicuous aquatic insect similar to a walking stick in appearance. These unusual bugs walk on the water surface in areas of protective vegetation.

Distribution: Northern U.S. Uncommon statewide.

Habitat: Protected ponds, sloughs, other lentic sites.

State Records: At least 19 populations are estimated to occur in the state. Three recent records from eastern WI.

Wolf River Basin Records: 7 records from 1999-2000.

Conservation Concerns: Water level modifications, shore alterations.

**a predaceous diving beetle (*Hydroporus badiellus*) - Special Concern, S3?**

Brief Description: A tiny (2.5 mm), dark aquatic beetle.

Distribution: Across Canada, WI, Upper Peninsula of MI and Northeastern U.S. Common in northern third of WI, but rare elsewhere in the state.

Habitat: Sites containing Sphagnum moss.

State Records: Common in Polk to Marinette Counties; only 10 collection records for the remainder of the state scattered from Jefferson and Shawano counties in the east to Douglas and Jackson counties in the west.

Wolf River Basin Records: 1 record from 1999.

Conservation Concerns: Wetland alterations, mossing.

**a predaceous diving beetle (*Hydroporus vittatus*) - Special Concern, S3**

Brief Description: A small (4.5 mm), light colored aquatic beetle with 3 broad, dark, longitudinal stripes.

Distribution: North-central portion of North America, from WY to OH, and southern Canada. Uncommon statewide.

Habitat: Most collections are from small to medium sized streams, also adjacent pond and spring ponds.

State Records: 34 county records across the state.

Wolf River Basin Records: 2 records from 1999-2000.

Conservation Concerns: Wetland alterations, stream bank modification, flow modifications.

**a caddisfly (*Hydropsyche bidens*) - Special Concern, S2**

Brief Description: An aquatic insect in which the larva builds a net adjacent to its tube-like retreat. Adults are similar to moths in appearance.

Distribution: Uncommon in lower Wisconsin, Black, Chippewa, St. Croix and Wolf Rivers. They are absent elsewhere.

Habitat: On submerged wood in large sandy rivers.

State Records: At least 11 populations are known in the state. One recent record from eastern WI.

Wolf River Basin Records: 4 records from 1999.

Conservation Concerns: This species is fairly intolerant of organic pollution. Water level modifications and shoreline alterations are also a concern.

**a predaceous diving beetle (*Ilybius discedens*) - Special Concern, S3**

Brief Description: A medium-sized (8 mm) dark aquatic beetle.

Distribution: Across Canada, western Great Lakes states, and northeastern U.S. Common in northern third of state; rare elsewhere.

Habitat: Sphagnum swamps with black spruce and tamarack.

State Records: Mainly northern WI from Polk to Marinette counties. Three records from central WI.

Wolf River Basin Records: 1 record from 1999.

Conservation Concerns: Wetland alterations, mossing.

**diving beetle (*Ilybius ignarus*) - Special Concern, S3**

Brief Description: A medium-sized (9 mm) dark aquatic beetle.

Distribution: Northeastern North America from New Brunswick to IL. Uncommon in southern two-thirds

of state; rare in the northern third and apparently absent in the northwest.

Habitat: Marshes, pond and swamps.

State Records: Uncommon to rare statewide.

Wolf River Basin Records: 5 records from 1999-2000.

Conservation Concerns: Wetland alterations.

**a predaceous diving beetle (*Ilybius incarinatus*) - Special Concern, S3S4**

Brief Description: A medium-sized (9 mm) streamlined aquatic beetle with red to reddish brown coloration.

Distribution: Found in the region around the Great Lakes, east to Nova Scotia and south to Washington, D.C., and Tennessee.

Habitat: Found in emergent sedges around temporary and permanent ponds and also in large cattail marshes.

State Records: New to the working list, 19 county records; very rare northern third, uncommon central third, fairly common southern third.

Wolf River Basin Records: A few county records.

Conservation Concerns: Unknown.

**a Perlid stonefly (*Isoperla bilineata*) - Special Concern, S2S3**

Brief Description: An aquatic insect (stonefly).

Distribution: Common in western and southwestern WI; rare or absent elsewhere.

Habitat: Large rivers.

State Records: An estimated 20 populations are thought to occur in the state. Two recent records from eastern WI.

Wolf River Basin Records: 3 records from 1999.

Conservation Concerns: This species is moderately intolerant of organic pollution. Water level modifications and shoreline alterations are also a concern.

**a Perlid stonefly (*Isoperla lata*) - Special Concern, SU**

Brief Description: A stonefly; adults are dark brown with a narrow pronotal stripe and pale areas near the eyes.

Distribution: Eastern Canada to MN and south to Tennessee.

Habitat: Cold high quality trout streams.

State Records: 4 records from northern and eastern WI.

Wolf River Basin Records: 1 record from 1996.

Conservation Concerns: Uncertain.

**a Perlid stonefly (*Isoperla marlynia*) - Special Concern, S3**

Brief Description: An aquatic insect (stonefly).

Distribution: Uncommon in northern third of state; rare in Juneau, Crawford and Green counties; apparently absent elsewhere.

Habitat: Large rivers.

State Records: An estimated 13 populations are thought to occur in the state. One recent record from

Waupaca county.

Wolf River Basin Records: 1 record from 1999.

Conservation Concerns: This species is moderately intolerant of organic pollution. Water level modifications and shoreline alterations are also a concern.

**a Perlid stonefly (*Isoperla richardsoni*) - Special Concern, S3**

Brief Description: An aquatic insect.

Distribution: Uncommon in northern half of state; absent in southern third and extreme northern part of the state.

Habitat: Large rivers.

State Records: At least 25 populations are known in the state. Three recent records from eastern WI.

Wolf River Basin Records: 1 record from 1999.

Conservation Concerns: This species is highly intolerant of organic pollution. Water level modifications and shoreline alterations are also a concern.

**a water scavenging beetle (*Laccobius agilis*) - Special Concern, S2S3**

Brief Description: A very small (3 mm) mottled aquatic beetle.

Distribution: Across Canada and northern U.S. Rare to uncommon statewide.

Habitat: Ponds, spring ponds and seeps, margins of streams.

State Records: At least 16 populations are thought to exist in the state. Recent records from eastern WI.

Wolf River Basin Records: 3 records from 1999-2000.

Conservation Concerns: Water level modifications; dredging.

**a predaceous beetle (*Laccobius reflexipennis*) - Special Concern, S1S2**

Brief Description: A very small (3 mm) mottled aquatic beetle.

Distribution: Across Canada, and eastern U.S. to WY. Very rare statewide.

Habitat: Margins of streams; ponds.

State Records: Previously only 2 collections known. One recent record from eastern WI.

Wolf River Basin Records: 2 records from 1999-2000.

Conservation Concerns: Water level modifications; dredging, riparian alterations.

**elegant spreadwing (*Lestes inaequalis*) - Special Concern, S2S3**

Brief Description: An elongate brilliant metallic green damselfly.

Distribution: Eastern U.S. and Canada.

Habitat: Ponds, lakes, and slow streams with ample emergent vegetation and usually heavily wooded shorelines.

State Records: 4 records from the southern half of the state.

Wolf River Basin Records: 1 record from 2000.

Conservation Concerns: Shoreline alterations.

**swamp spreadwing (*Lestes vigilax*) - Special Concern, S3**

Brief Description: A large slender dark green damselfly.



Distribution: Eastern and central U.S. and Canada.

Habitat: Boggy ponds and lakes, swamps, slow backwater streams, and other acid waters.

State Records: 7 records from southern and eastern WI.

Wolf River Basin Records: 3 records from 2000.

Conservation Concerns: Uncertain.

**Cantrall's bog beetle (*Liodessus cantralli*) - Special Concern, SU**

Brief Description: A tiny (<2 mm) brown aquatic beetle.

Distribution: Central Canada, WI and MI.

Habitat: small ponds to large marshes, and within Sphagnum mats of fens.

State Records: 3 current records from eastern WI (Shawano, Vernon, and Dodge counties).

Wolf River Basin Records: 1 new record from 1999 in Outagamie Co.

Conservation Concerns: Uncertain.

**a predaceous diving beetle (*Liodessus flavicollis*) - Special Concern, S3?**

Brief Description: A tiny (<2 mm) aquatic beetle with a bold checkerboard pattern.

Distribution: Found from southern Quebec, Ontario and Manitoba to Florida and northern Texas.

Habitat: Usually found in algal mats in relatively deep water. Most are clear-water pools or ponds have sandy substrates.

State Records: New to the working list, 15 county records documented.

Wolf River Basin Records: New county record from Winnebago Co.

Conservation Concerns: Unknown.

**a predaceous diving beetle (*Lioporeus triangularis*) - Special Concern, SU**

Brief Description: A small (4 mm) aquatic beetle with a checkerboard pattern.

Distribution: From NY to WI and south to FL.

Habitat: A big river species that lives on wood and under banks over a sand bottom.

State Records: Collected from five sites in four counties.

Wolf River Basin Records: 1 record from 1999.

Conservation Concerns: Uncertain.

**a predaceous diving beetle (*Matus bicarinatus*) - Special Concern, S2S3**

Brief Description: A streamlined, medium-sized (8 mm) reddish brown aquatic beetle.

Distribution: Eastern North America. Uncommon in south half of state (Buffalo to Manitowoc counties), apparently absent elsewhere.

Habitat: Ponds and marshes in association with large streams.

State Records: At least 15 populations known from the southern part of the state.

Wolf River Basin Records: 3 records from 1999-2000.

Conservation Concerns: Wetland alterations.

**elfin skimmer (*Nannothemis bella*) - Special Concern, S3**

Brief Description: A delicate little (ca 2cm) clear-winged dragonfly. Appearance changes with age. Small thorax, thinly clad with rather long whitish hairs. Legs black.

Distribution: Ontario and Quebec Canada, Alaska, and the eastern half of the U.S.

Habitat: Shallow water wetlands, usually with sphagnum or other underwater vegetation.

State Records: Collected from 7 waterbodies in Wisconsin.

Wolf River Basin Records: 1 record from 1990.

Conservation Concerns: Uncertain.

**a predaceous diving beetle (*Neoscutopterus hornii*) - Special Concern, S1S3**

Brief Description: A large (15 mm) black aquatic beetle.

Distribution: Across Canada, WI and MI. Fairly common in northern half of the state (north of Marathon county) and apparently absent elsewhere.

Habitat: Swamps and bogs, usually containing Sphagnum.

State Records: Twenty to 100 populations are thought to exist in the state. Recent records from Vilas and Outagamie

Wolf River Basin Records: 1 record from 1999.

Conservation Concerns: Wetland alterations.

**a water scorpion (*Nepa apiculata*) - Special Concern, SU**

Brief Description: A dark brown, strongly flattened aquatic insect, that looks like a dead leaf. Adults are 17 mm long with a short 'tail' (breathing tube).

Distribution: Eastern distribution in North America and is quite scarce in the Great Plains region.

Habitat: Lentic or lotic in dense aquatic vegetation.

State Records: 9 county records known to exist.

Wolf River Basin Records: 1 record from 2000.

Conservation Concerns: Uncertain.

**Stygian shadowfly (*Neurocordulia yamaskanensis*) - Special Concern, S3**

Brief Description: A pale golden yellow and brown medium sized dragonfly.

Distribution: Widely distributed in northern half of the state; local elsewhere.

Habitat: Larvae in rapid, moderate to large, warm-water streams with abundant submerged boulders or cliff face. Adults fly only at dusk.

State Records: Known from 25 waterbodies statewide except SE WI.

Wolf River Basin Records: 2 records from 1991 and 1999.

Conservation Concerns: Unknown, but possibly sensitive to sedimentation.

**riffle snaketail (*Ophiogomphus carolus*) - Special Concern, S3**

Brief Description: A small greenish dragonfly, striped with brown, and wings clear.

Distribution: Found in northern and eastern United States and southern and eastern Canada.

Habitat: Shallow stony riffles in woodland streams.

State Records: 32 documented populations, all in the northern third of the state. Most are current populations.

Wolf River Basin Records: 1 population in the Wolf River.

Conservation Concerns: Unknown.

**pygmy snaketail (*Ophiogomphus howei*) - Threatened, S3**

Brief Description: A small black and yellow dragonfly with a stout body. Basal portion of hind wings with a yellow wash.

Distribution: Widely distributed in a band across the northern half of the state.

Habitat: Middle sections of rapid warmwater streams with abundant gravel substrate. Adults apparently forage and perch on the stream-side forest canopy.

State Records: Known from 27 waterbodies in the state.

Wolf River Basin Records: 5 records from 1999.

Conservation Concerns: Sensitive to sedimentation and possibly to stream side openings in the forest canopy.

**Mississippi grass shrimp (*Palaemonetes kadiakensis*) - Special Concern, S1S3**

Brief Description: A translucent shrimp with a slight pinkish, yellowish, or tannish hue over the entire body.

Distribution: Fresh waters of central United States, west of the Alleghenies from the Great Lakes south to the Gulf Coast.

Habitat: Found among aquatic vegetation in sluggish regions of lotic systems.

State Records: Found primarily in the Mississippi River, but has also been found in the St. Croix and the Wolf River.

Wolf River Basin Records: Possibly a disjunct population (established subsequent to introduction).

Conservation Concerns: Unknown.

**a small minnow mayfly (*Paracloeodes minutus*) - Special Concern, S1?**

Brief Description: A tiny aquatic insect (4 mm). The adult mayfly is very short lived.

Distribution: Occurs throughout much of the U.S.

Habitat: Large, deep, warm streams where there is strong current and fine sands.

State Records: A few records on the lower Wisconsin River and one record from the Wolf River basin

Wolf River Basin Records: 1 record from 1992.

Conservation Concerns: Hydrologic alterations related to dam operation.

**a primitive minnow mayfly (*Parametetus chelifera*) - Special Concern, S1?**

Brief Description: A small (10 mm) aquatic insect with large, plate-like gills on the abdomen. The adult mayfly is very short lived.

Distribution: Known from northern parts of Canada, and only WI in the U.S.

Habitat: Medium sized, warm streams with moderate to fast flow.

State Records: Populations are known from the St. Croix and Wolf rivers in Burnett and Outagamie counties.

Wolf River Basin Records: 1 record from 1993.

Conservation Concerns: Uncertain

**a creeping water bug (*Pelocoris femorata*) - Special Concern, S2S3**

Brief Description: A medium-sized (9 mm), mottled colored, egg-shaped aquatic insect.

Distribution: Found in eastern two-thirds of U.S. Uncommon south of Sauk and Dane counties (4 specimens from Juneau county) and apparently absent elsewhere.

Habitat: Spring ponds, backwaters and impoundments of streams.

State Records: At least 7 populations are estimated to occur in the state. Two recent records from eastern WI.

Wolf River Basin Records: 2 records from 1999.

Conservation Concerns: Water level modifications; shore alterations.

**an Ephemerid mayfly (*Pentagenia vittigera*) - Special Concern, S2?**

Brief Description: An aquatic insect (20 mm) whose immatures (larvae) burrow in clay-bottomed streams and have feathery gills on the abdomen. The adult mayfly has large wings, but is very short lived.

Distribution: Central North America from TX and FL northward into WI and Manitoba.

Habitat: Warm water streams with clay substrates

State Records: Dane, Grant, Green, Richland, and Rock counties in southern WI, and the Wolf River in Waupaca County.

Wolf River Basin Records: 1 record from 1992.

Conservation Concerns: Uncertain

**a small minnow mayfly (*Plauditus cestus*) - Special Concern, S2**

Brief Description: A tiny (4 mm) mayfly; the abdomen is pale colored, with 1 darkly colored segment. Adults are inconspicuous and short lived.

Distribution: Widespread in North America.

Habitat: Medium to large streams.

State Records: Twelve populations are estimated to be in the state. One recent record from eastern WI.

Wolf River Basin Records: 2 records from 1999-2000.

Conservation Concerns: Water level modifications; dredging, bank alterations.

**round pigtoe (*Pleurobema sintoxia*) - Special Concern, S3**

Brief Description: A highly variable freshwater mussel; relatively large, rounded or elongate, chestnut or brown, with a shallow beak cavity. Length to 4 inches (10.2 cm).

Distribution: Found throughout most of the Mississippi – Missouri river systems in the U.S. Found in Lake Erie, and tributaries of Lake Erie and Lake St. Clair in southwestern Ontario.

Habitat: Medium to large rivers in mud, sand, or gravel.

State Records: Known from 24 waterbodies in Wisconsin

Wolf River Basin Records: 4 records from 1988-1991.

Conservation Concerns: Increased sedimentation, impoundment.

**white river crayfish (*Procambarus acutus*) - Special Concern, S3?**

Brief Description: Adults are tan, orange, or scarlet in color on top, lighter in color on the sides.

Distribution: Northeast along coastal plain and piedmont to New England, and the Mississippi River Drainage.

Habitat: Widely tolerant, in most lentic situations in range and in sluggish streams.

State Records: Known from 16 counties, mainly in the southeastern corner. 3 populations in the state documented in 2000, all from the Wolf River Basin.

Wolf River Basin Records: Three state records are in the study area.

Conservation Concerns: Unknown.

**a Heptageniid mayfly (*Pseudiron centralis*) - Special Concern, S3**

Brief Description: A medium-sized aquatic insect whose immature form (larva) is flattened and burrows in sand bottomed streams and the adult mayfly is very short lived.

Distribution: Extreme western and southern WI and a disjunct cluster of populations in the Lower Wolf River basin.

Habitat: Large sand bottomed rivers where larvae occur in shallow (6 inches) to deep (4 feet) water on shifting sand bars.

State Records: Known from 8 streams in 7 counties.

Wolf River Basin Records: 2 records from 1999.

Conservation Concerns: Factors that would alter natural flow regime of large rivers such as hydroelectric dam operations.

**a water scorpion (*Ranatra nigra*) - Special Concern, S2**

Brief Description: A large (30 mm) brown, narrow aquatic insect that looks similar to a walking stick, but has a long, posterior breathing tube.

Distribution: Eastern half of U.S. Rare to uncommon statewide.

Habitat: Large, deep lentic sites, and rivers.

State Records: 52 collections made, rare south of Lincoln county.

Wolf River Basin Records: 3 records from 2000.

Conservation Concerns: Water level modifications; shore alterations.

**a predaceous diving beetle (*Rhantus sinuatus*) - Special Concern, S3**

Brief Description: A streamlined, medium-sized (9 mm) black aquatic beetle.

Distribution: Across Canada, and northern U.S. Uncommon statewide.

Habitat: Mostly in sedge or cattail marshes, often with Sphagnum. Almost all specimens were taken in bottle traps which suggests nocturnal behavior.

State Records: At least 30 populations are thought to exist in the state. Recent records from Outagamie County.

Wolf River Basin Records: 4 records from 1999-2000.

Conservation Concerns: Wetland alterations.

**salamander mussel (*Simpsonaias ambigua*) - Threatened, S2S3**

Brief Description: A freshwater musse, with a yellow or brown, smooth, fragile, elongate, and thin shell. Length to 2 inches (5.1 cm).

Distribution: It is known from the Lake St. Clair, Lake Huron, and Lake Erie drainages; and from the Ohio River System, the Cumberland River System (Red River, Kentucky), and the upper Mississippi River System (Illinois, Iowa, Wisconsin, Missouri and Arkansas).

Habitat: Found in medium to large rivers on mud or gravel bars but more common under flat slabs of rock, stones, or in ledges of underwater cliff faces.

State Records: Known from the Chippewa, Embarrass, Eau Claire, south fork of the Flambeau, Lemonweir, Mississippi, St. Croix, Wisconsin, and the Wolf Rivers.

Wolf River Basin Records: 2 records from the late 1980s to the early 1990s.

Conservation Concerns: Due to the specificity of the host species, the mudpuppy (*Necturus maculosus*), protection of mudpuppies and their habitats is particularly important.

**forcipate emerald (*Somatochlora forcipata*) - Special Concern, S2S3**

Brief Description: A medium sized darkly colored dragonfly with metallic reflections. Thick growth of brownish hairs cover thorax. Abdominal stripes of sides appear as two conspicuous, similar, roundish-oval spots of pale yellow.

Distribution: Canada, New England, and some northern Midwest states.

Habitat: Small spring fed woodland streams and pools.

State Records: Only collected from three counties in Wisconsin. There have been collections from nine sites in two counties in the 1980s and 1990s.

Wolf River Basin Records: 1 record from 2000.

Conservation Concerns: Water level fluctuations.

**warpaint emerald (*Somatochlora incurvata*) - Endangered, S2**

Brief Description: A medium sized slender and elongate metallic brown dragonfly.

Distribution: A modest total known range from Cape Breton Island, west to northern Michigan, south to Massachusetts.

Habitat: Habitat is bogs, fens, and heaths. Wisconsin larval habitat is Central Poor Fen with sphagnum moss.

State Records: 17 records, all but one in the west-central portion of the state. The other record from Langlade county.

Wolf River Basin Records: 1 record from 2000.

Conservation Concerns: Potential threats of habitat degradation from harvesting of peatmoss and fuel peat, cranberry farming, broadcast toxic pollution, and water level alteration leading to inundation or desiccation of the habitat.

**a water scavenging beetle (*Sperchopsis tessellatus*) - Special Concern, S2S3**

Brief Description: A medium-sized (7 mm), brown mottled aquatic beetle.

Distribution: Eastern North America. Rare in the western 3/4th of the state (Florence to Dane counties); not known from the eastern quarter.

Habitat: Small, cool streams, usually with sand.

State Records: Twenty to 25 populations are estimated to be in the state. A few recent records from eastern WI.

Wolf River Basin Records: 4 records from 1999-2000.

Conservation Concerns: Water level modifications; dredging, bank alterations.

**a riffle beetle (*Stenelmis antennalis*) - Special Concern, SU**

Brief Description: A small (3 mm), dark aquatic beetle with narrow, longitudinal yellow stripes.

Distribution: Mainly Southeastern U.S. and the immediate Mississippi River drainage basin. Common in Burnett county; rare to locally common at a few sites in central WI; absent elsewhere.

Habitat: Submerged wood in large sandy rivers.

State Records: At least 13 populations are thought to exist in the state. Recent records from eastern WI.

Wolf River Basin Records: 1 record from 1999.

Conservation Concerns: Shoreline modifications, flow modifications.

### **a riffle beetle (*Stenelmis bicarinata*) - Special Concern, S3**

Brief Description: A small (3.5 mm), dark aquatic beetle with narrow, longitudinal yellow stripes.

Distribution: Much of eastern North America. Common in northwest WI; rare in northern half of state (Buffalo to Outagamie counties); absent in southern half.

Habitat: Submerged wood in large sandy rivers.

State Records: At least 32 populations are thought to exist in the state. Recent records from eastern WI.

Wolf River Basin Records: 3 records from 1999.

Conservation Concerns: Shoreline modifications, flow modifications.

### **a riffle beetle (*Stenelmis fuscata*) - Special Concern, S2**

Brief Description: A small (3.5 mm), dark aquatic beetle.

Distribution: Mainly Southeastern U.S. and the immediate Mississippi River drainage basin. Rare along a linear distribution from Iowa to Oconto counties.

Habitat: Submerged wood in large sandy rivers.

State Records: At least 11 populations are thought to exist in the state. Recent records from eastern WI.

Wolf River Basin Records: 5 records from 1999.

Conservation Concerns: Shoreline modifications, flow modifications.

### **least clubtail (*Stylogomphus albistylus*) - Special Concern, S3**

Brief Description: A tiny black and yellow dragonfly with a pronounced widening near the end of the abdomen (clubtail).

Distribution: Restricted to high gradient streams in the northern third of the state.

Habitat: Larvae burrow in clean sand and gravel in small to moderate sized high gradient cool to warm water streams.

State Records: Known from 23 streams in 13 counties

Wolf River Basin Records: 1 record from 1989.

Conservation Concerns: Probably sensitive to sedimentation and impoundments.

### **elusive clubtail (*Stylurus notatus*) - Special Concern, S2S3**

Brief Description: A medium sized blackish dragonfly with yellow markings and an elongate body.

Distribution: Widely distributed in the western half of the state.

Habitat: Larvae live in depositional sand in lower sections of larger warm-water streams. Adults are seldom seen or collected because of their habit of patrolling open river channels away from the shore and perching well up in trees.

State Records: 20 records known from 14 waterbodies in the state.

Wolf River Basin Records: 9 records from the 1990s.

Conservation Concerns: Sensitive to sedimentation and possibly to stream-side openings in the forest canopy.

**zebra clubtail (*Stylurus scudderi*) - Special Concern, S3**

Brief Description: A large black and yellow dragonfly with end of abdomen widely expanded in males. Yellow rings on black abdomen distinguish it from other large Clubtails.

Distribution: Global Range - Eastern Canada and U.S.

Habitat: Larvae in cool sandy streams (trout streams) in forested habitats.

State Records: Known from 13 WI counties in the heavily forested northern part of the state with a pocket in Jackson County. Factors limiting distribution in WI are not known.

Wolf River Basin Records: 2 records from the 1990s.

Conservation Concerns: Shoreline modifications, water quality degradation, water level alterations.

**a caddisfly (*Trienodes nox*) - Special Concern, S1S3**

Brief Description: An aquatic insect whose larvae are whitish, 10 mm long, and have 2 dark parallel stripes on their light-colored head and prothorax. They build spiral cases of small strips of vegetation. Adults are moth-like insects with long antennae.

Distribution: Mainly northern in distribution from New Brunswick to Ohio to Manitoba, along with AL, GA, and FL.

Habitat: Ponds, lake shores, and generally slow-flowing areas of streams and rivers.

State Records: New to the working list, only 2 populations documented in the state.

Wolf River Basin Records: 2 records from 2000.

Conservation Concerns: Uncertain.

**buckhorn (*Tritogonia verrucosa*) - Threatened, S2**

Brief Description: A freshwater mussel, with a brown or black elongate shell, moderately large, heavy, and has many pustules. Length to 8 inches.

Distribution: Mississippi River drainage; southeast in streams draining into the Gulf of Mexico from the Alabama River systems, west to central Texas.

Habitat: Inhabits fairly deep water on a sand or mud bottom. Also found in riffles and in shallow water (1-3m) of smaller streams.

State Records: Known from the Mississippi, Black, upper and lower Wisconsin, White, St. Croix, Baraboo, Chippewa, Eau Claire, Pecatonica, and Wolf Rivers.

Wolf River Basin Records: 1 record from 1995.

Conservation Concerns: Habitat destruction and river pollution have resulted in declines. Restriction of dredging, impoundments sand and gravel mining, and navigational improvements would benefit this species. The development of fish runways to facilitate movement around dams.

**a caddisfly (*Wormaldia moesta*) - Special Concern, SU**

Brief Description: Larvae of this aquatic insect are whitish and about 10 mm long. They build silken tube-like catchnets. Adults are inconspicuous moth-like insects.

Distribution: It occurs from NY to GA, and northwest to WI.

Habitat: Small, cold, rapid streams.



State Records: New to the working list, at least 6 populations from 6 counties are known in the state (Sauk, Price, Forest, Florence, Marinette, Brown).

Wolf River Basin Records: 1 record from 1980.

Conservation Concerns: Uncertain.

## Birds

### **Northern Goshawk (*Accipiter gentilis*) - Special Concern, S2N,S2B**

Brief Description: Large gray to brown hawk with pale stripe over eye.

Distribution: Circumboreal.

Habitat: Locally remote tracts of forest. These are typically hardwood, hardwood/conifer, or upland conifer stands and have not been recently managed. Nests in young stands are rare. Good numbers of prey animals such as medium-sized birds and mammals near nesting areas are required as well. Doesn't do well in areas dominated by red-tailed hawks or

State Records: Wisconsin status uncertain. Reportedly declining in the NE. Nests typically reported from northern third of the state. Several nests are known from central WI. A few locations have been recently reported from east central WI as well. A study by WDNR is currently underway to determine nesting density in WI.

Wolf River Basin Records: 5 recent breeding populations documented.

Conservation Concerns: Logging, including clear cutting, thinning, and selective harvesting; increased accessibility to humans due to road building; trails, etc.

### **Henslow's Sparrow (*Ammodramus henslowii*) - Threatened, S2S3B,SZN**

Brief Description: A small bird (sparrow). Characterized by large flat head, large gray bill, and short tail. The head, nape, and most of the central crown stripe are olive-colored, with the wings extensively dark chestnut. The breast is finely

Distribution: Central and eastern U.S.

Habitat: Open fields and meadows with grass interspersed with weeds or shrubby vegetation, especially in damp or low-lying areas.

State Records: 33 records scattered throughout the state, except for the northern third.

Wolf River Basin Records: 3 records from 2000.

Conservation Concerns: Decline apparently is related to loss of habitat due to encroaching urbanization, successional change to shrubland or forest, and use for row-crop agriculture.

### **Great Blue heron (*Ardea herodias*) - Special Concern, S3B,SAN**

Brief Description: A large wading bird (heron).

Distribution: Breeds southeastern Alaska and southern Canada to southern Mexico.

Habitat: Freshwater marshes, along lakes, rivers, bays, lagoons, fields, and meadows. Nests commonly high in trees in swamps and forested areas, less commonly in bushes, or on ground, and rock ledges. Often nests with other herons.

State Records: 51 rookeries are documented in the state. They occur throughout the state, but are the great blue herons are mapped to the northern and eastern portions of the state.

Wolf River Basin Records: 2 recent breeding populations occur in the study area.